

What is claimed is:

1. A conductive composition for filling a via, based on total composition comprising:
 - a) 4.0 –12.0 wt. % organic vehicle; and
 - b) 88.0 - 96.0 wt. % electrically conductive particles selected from the group consisting of silver and nickel and mixtures thereof.
2. The conductive composition according to claim 1, wherein the electrically conductive particles comprise 90.0 to 93.0 wt. % of the total composition.
3. The conductive composition according to claim 1, wherein the organic vehicle based on total composition comprises:
 - a) 2.0 – 6.0 wt. % pine oil;
 - b) 1.6 – 4.8 wt. % benzyl alcohol; and
 - c) 0.4 – 1.2 wt. % ethyl cellulose.

4. The conductive composition according to claim 3, wherein the electrically conductive particles based on total composition further comprise:

- a) 15.0 - 60.0 wt. % silver; and
- b) 28.0 - 81.0 wt. % nickel.

5. The conductive composition according to claim 4, wherein the electrically conductive particles based on total composition further comprise:

- a) 15.0 - 30.0 wt. % silver; and
- b) 66.0 - 78.0 wt. % nickel.

6. The conductive composition according to claim 5, wherein the electrically conductive particles have a spherical shape.

7. The conductive composition according to claim 6, wherein the nickel particles have a diameter of 15.0 – 25.0 microns.

8. The conductive composition according to claim 6, wherein the silver particles have a diameter of 1.0 – 5.0 microns.

9. The conductive composition according to claim 1, wherein the conductive composition is applied to a substrate that is chosen from the group consisting of alumina ceramic and aluminum nitride.

10. The conductive composition according to claim 9, wherein the conductive composition is cured at a temperature range from 800 degrees Celsius to 900 degrees Celsius.

11. The conductive composition according to claim 10, wherein the conductive composition has a cure time between 5 and 30 minutes.

12. A conductive via fill composition, based on total composition comprising:

- a) 4.0 –12.0 wt. % organic vehicle; and
- b) 15.0 - 60.0 wt. % silver particles; and
- c) 70.0 - 78.0 wt. % nickel particles.

13. The conductive via fill composition according to claim 12, wherein the organic vehicle based on total composition comprises:

- a) 2.0 – 6.0 wt. % pine oil;
- b) 1.6 – 4.8 wt. % benzyl alcohol; and
- c) 0.4 – 1.2 wt. % ethyl cellulose.

14. The conductive via fill composition according to claim 13, further comprising:

- a) 15.0 - 30.0 wt. % silver; and
- b) 66.0 - 78.0 wt. % nickel.

15. The conductive via fill composition according to claim 14, wherein the nickel and silver particles have a spherical shape.

16. The conductive via fill composition according to claim 15, wherein the nickel particles have a diameter of 15.0 – 25.0 microns.

17. The conductive via fill composition according to claim 16, wherein the silver particles have a diameter of 1.0 – 5.0 microns.

18. The conductive via fill composition according to claim 12, wherein the conductive composition is applied to an alumina ceramic.

19. The conductive via fill composition according to claim 18, wherein the composition is cured at a temperature from 800 degrees Celsius to 900 degrees Celsius.

20. The conductive via fill composition according to claim 19, wherein the composition has a cure time between 5 and 30 minutes.